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ART UNIT	**PAPER NUMBER**
2684	12

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/034,082	SMITH ET AL.	
	Examiner	Art Unit	
	Tanmay S Lele	2684	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-59* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-59* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Allowable Subject Matter

1. The indicated allowability of claim 29 is withdrawn. The rejections follow below. The delay in the citing of these rejections is regretted.

2. The indicated allowability of claim 15 is withdrawn in view of the newly discovered reference(s) to Pelech et al (Pelech, US Patent No. 6,243,585) in view of Campbell (Campbell, US Patent No. 6,167,263). Rejections based on the newly cited reference(s) follow. The delay in the citing of this art is regretted.

3. Claims 16 – 19 and 22 – 24 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Regarding claim 16, the present invention is of wherein the self-positioning wireless transceiver system comprises first and second self-positioning transceivers, the method further including the steps of positioning the first self-positioning transceiver positioning within communication range of the first device; establishing communicative coupling between the first transceiver and the first device; if the signal received from the second device is less than a first threshold, issuing a request to a second self-positioning transceiver for support; positioning the second self-positioning transceiver within communication range of the first self-positioning transceiver and the first device; establishing communicative coupling between the second self-positioning transceiver and the first device; establishing communicative coupling between the second self-positioning transceiver and the first self-positioning transceiver; positioning the first self-positioning transceiver a predefined incremental distance toward the second device; and

positioning the second self-positioning transceiver with respect to the first self-positioning transceiver and with respect to the first device such that the quality of a first communication signal received from the first self-positioning transceivers and the quality of a second communication signal received from the first device are approximately equal. The closest prior art, Pelech et al (Pelech, US Patent No. 6,243,585) in view of Campbell (Campbell, US Patent No. 6,167,263), teach of wherein the self-positioning wireless transceiver system comprises first and second self-positioning transceivers, the method further including the steps of positioning the first self-positioning transceiver positioning within communication range of the first device; establishing communicative coupling between the first transceiver and the first device; if the signal received from the second device is less than a first threshold, issuing a request to a second self-positioning transceiver for support; establishing communicative coupling between the second self-positioning transceiver and the first self-positioning transceiver; and positioning the second self-positioning transceiver with respect to the first self-positioning transceiver and with respect to the first device such that the quality of a first communication signal received from the first self-positioning transceivers and the quality of a second communication signal received from the first device are approximately equal but alone or in combination with other prior art, not specifically of the combined steps of positioning the second self-positioning transceiver within communication range of the first self-positioning transceiver and the first device; establishing communicative coupling between the second self-positioning transceiver and the first device; positioning the first self-positioning transceiver a predefined incremental distance toward the second device.

Claim 17 is allowed as being dependent on claim 16.

Regarding claim 18, the present invention is of wherein the self-positioning wireless transceiver system comprises a plurality of self-positioning transceivers wherein a subset of the plurality of self-positioning transceivers are communicatively coupled to create a communication link from the first device to the second device, the method further including the steps of: detecting a movement of the first device relative to the position of the second device; positioning the first self-positioning transceiver of the subset of self-positioning transceivers repositioning to remain within communication range of the first device; repositioning each of the subset of self-positioning transceivers communicatively coupling the first self-positioning transceiver to the second device with respect to a neighboring self-positioning transceiver such that the quality of each communication signal received by each of the subset of self-positioning transceivers from a neighboring self-positioning transceiver are approximately equal; if the quality of a signal received by at least one of the subset of self-positioning transceivers from a neighboring self-positioning transceiver is less than a first threshold, issuing a request to a second self-positioning transceiver for support and if the quality of a signal received by at least one of the subset of self-positioning transceivers from a neighboring self-positioning transceiver is greater than a second threshold, issuing a request to one of the subset of self-positioning transceivers to communicatively decouple itself from the first device, the second device and the other self-positioning transceivers of the subset of the positioning transceivers. The closest prior art, Pelech et al (Pelech, US Patent No. 6,243,585) in view of Campbell (Campbell, US Patent No. 6,167,263), teach of repositioning each of the subset of self-positioning transceivers communicatively coupling the first self-positioning transceiver to the second device with respect to a neighboring self-positioning transceiver such that the quality of each communication signal

received by each of the subset of self-positioning transceivers from a neighboring self-positioning transceiver are approximately equal; but alone or in combination with other prior art not of wherein the self-positioning wireless transceiver system comprises a plurality of self-positioning transceivers wherein a subset of the plurality of self-positioning transceivers are communicatively coupled to create a communication link from the first device to the second device, the method further including the steps of: detecting a movement of the first device relative to the position of the second device; positioning the first self-positioning transceiver of the subset of self-positioning transceivers repositioning to remain within communication range of the first device; if the quality of a signal received by at least one of the subset of self-positioning transceivers from a neighboring self-positioning transceiver is less than a first threshold, issuing a request to a second self-positioning transceiver for support and if the quality of a signal received by at least one of the subset of self-positioning transceivers from a neighboring self-positioning transceiver is greater than a second threshold, issuing a request to one of the subset of self-positioning transceivers to communicatively decouple itself from the first device, the second device and the other self-positioning transceivers of the subset of the positioning transceivers.

Claim 19 is allowed as being dependent on claim 18.

Regarding claim 22, the present invention is of further including the steps of:(i) determining that a predetermined period has passed without the detection of a need to form a communication link between the first device and the second device; (ii) initiating a search for a homing signal generated from a home location; (iii) searching for the homing signal; (iv) if the homing signal is detected, following the homing signal to the home location; (v) if the homing

signal cannot be detected, at least one of the plurality of self-positioning transceivers positioning itself an incremental distance away from a reference position to search for the homing signal; and (vi) repeat steps (iii) through (v) until the homing signal is detected. The closest prior art, Pelech et al (Pelech, US Patent No. 6,243,585) in view of Campbell (Campbell, US Patent No. 6;167,263), alone or in combination with other prior art do not specifically teach of (i) determining that a predetermined period has passed without the detection of a need to form a communication link between the first device and the second device; (ii) initiating a search for a homing signal generated from a home location; (iii) searching for the homing signal; (iv) if the homing signal is detected, following the homing signal to the home location; (v) if the homing signal cannot be detected, at least one of the plurality of self-positioning transceivers positioning itself an incremental distance away from a reference position to search for the homing signal; and (vi) repeat steps (iii) through (v) until the homing signal is detected.

Claim 23 is allowed as being dependent on claim 22.

Regarding claim 24, the present invention is of, further including the steps of: (i) issuing a retrieve command to the plurality of self-positioning transceivers; (ii) each of the plurality of self-positioning transceivers positioning itself closer to a neighboring self-positioning transceiver in the approximate direction of the first device; (iii) identifying a self-positioning transceiver of the plurality that is directly communicatively coupled to the first device; (iv) communicatively decoupling the identified self-positioning transceiver from the other of the plurality of self-positioning transceivers and from the first device; (v) repeat steps (ii) through (iv) until the plurality of self-positioning transceivers have been communicatively decoupled from the first device. The closest prior art, Pelech et al (Pelech, US Patent No. 6,243,585) in view of Campbell

(Campbell, US Patent No. 6,167,263), alone or in combination with other prior art do not specifically teach of further including the steps of: (i) issuing a retrieve command to the plurality of self-positioning transceivers; (ii) each of the plurality of self-positioning transceivers positioning itself closer to a neighboring self-positioning transceiver in the approximate direction of the first device; (iii) identifying a self-positioning transceiver of the plurality that is directly communicatively coupled to the first device; (iv) communicatively decoupling the identified self-positioning transceiver from the other of the plurality of self-positioning transceivers and from the first device; (v) repeat steps (ii) through (iv) until the plurality of self-positioning transceivers have been communicatively decoupled from the first device.

4. Claim 53 – 57 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

Regarding claim 53, the present invention is of a method of establishing a wireless communication path between a first device and a second device, the method comprising the steps of: automatically positioning a self-positioning wireless transceiver system within communication range of a first device and a second device, the self-positioning wireless transceiver system having a plurality of self-positioning transceivers a subset of which are communicatively coupled to create a communication link from the first device to the second device; establishing communicative coupling between the self-positioning wireless transceiver system and the first device; and establishing communicative coupling between the self-positioning wireless transceiver system and the second device while maintaining communicative coupling with the first device; detecting a movement of the first device relative to the position of the second device; positioning a first self-positioning transceiver of the subset of self positioning

transceivers repositioning to remain within communication range of the first device; repositioning each of the subset of self-positioning transceivers communicatively coupling the first self-positioning transceiver to the second device with respect to a neighboring self-positioning transceiver such that the quality of each communication signal received by each of the subset of self-positioning transceivers from a neighboring self-positioning transceiver are approximately equal; if the quality of a signal received by at least one of the subset of self-positioning transceivers from a neighboring self-positioning transceiver is less than a first threshold, issuing a request to a second self positioning transceiver for support and if the quality of a signal received by at least one of the subset of self-positioning transceivers from a neighboring self-positioning transceiver is greater than a second threshold, issuing a request to one of the subset of self-positioning transceivers to communicatively decouple itself from the first device, the second device and the other self-positioning transceivers of the subset of self-positioning transceivers. The closest prior art, Pelech et al (Pelech, US Patent No. 6,243,585) in view of Campbell (Campbell, US Patent No. 6,167,263), teach of a method of establishing a wireless communication path between a first device and a second device, the method comprising the steps of: automatically positioning a self-positioning wireless transceiver system within communication range of a first device and a second device, the self-positioning wireless transceiver system having a plurality of self-positioning transceivers a subset of which are communicatively coupled to create a communication link from the first device to the second device; establishing communicative coupling between the self-positioning wireless transceiver system and the first device; and establishing communicative coupling between the self-positioning wireless transceiver system and the second device while maintaining communicative

coupling with the first device; detecting a movement of the first device relative to the position of the second device; but alone, or in combination with other prior art, not of positioning a first self-positioning transceiver of the subset of self positioning transceivers repositioning to remain within communication range of the first device; repositioning each of the subset of self-positioning transceivers communicatively coupling the first self-positioning transceiver to the second device with respect to a neighboring self-positioning transceiver such that the quality of each communication signal received by each of the subset of self-positioning transceivers from a neighboring self-positioning transceiver are approximately equal; if the quality of a signal received by at least one of the subset of self-positioning transceivers from a neighboring self-positioning transceiver is less than a first threshold, issuing a request to a second self positioning transceiver for support and if the quality of a signal received by at least one of the subset of self-positioning transceivers from a neighboring self-positioning transceiver is greater than a second threshold, issuing a request to one of the subset of self-positioning transceivers to communicatively decouple itself from the first device, the second device and the other self-positioning transceivers of the subset of self-positioning transceivers.

Claim 54 is allowed as being dependent on claim 53.

Regarding claim 55, the present invention is of a method of establishing a wireless communication path between a first device and a second device, the method comprising the steps of: automatically positioning a self-positioning wireless transceiver system within communication range of a first device and a second device, the self-positioning wireless transceiver system comprising a plurality of communicatively coupled self-positioning transceivers; establishing communicative coupling between the self-positioning wireless

transceiver system and the first device; and establishing communicative coupling between the self-positioning wireless transceiver system and the second device while maintaining communicative coupling with the first device; determining that a predetermined period has passed without the detection of a need to form a communication link between the first device and the second device using the self-positioning transceiver system and responsive thereto initiating a search for a homing signal generated from a home location, (ii) searching for the homing signal; (iii) if the homing signal is detected, having the self-positioning transceiver system follow the homing signal to the home location; (iv) if the homing signal cannot be detected, at least one of the plurality of self-positioning transceivers positioning itself an incremental distance away from a reference position to search for the homing signal; (v) repeating steps (ii.) through (iv) until the homing signal is detected; and retrieving the self-positioning transceiver system to the home location. The closest prior art Pelech et al (Pelech, US Patent No. 6,243,585) in view of Campbell (Campbell, US Patent No. 6,167,263), teach of a method of establishing a wireless communication path between a first device and a second device, the method comprising the steps of: automatically positioning a self-positioning wireless transceiver system within communication range of a first device and a second device, the self-positioning wireless transceiver system comprising a plurality of communicatively coupled self-positioning transceivers; establishing communicative coupling between the self-positioning wireless transceiver system and the first device; and establishing communicative coupling between the self-positioning wireless transceiver system and the second device while maintaining communicative coupling with the first device; but alone or in combination with other prior art not of determining that a predetermined period has passed without the detection of a need to

form a communication link between the first device and the second device using the self-positioning transceiver system and responsive thereto initiating a search for a homing signal generated from a home location, (ii) searching for the homing signal; (iii) if the homing signal is detected, having the self-positioning transceiver system follow the homing signal to the home location; (iv) if the homing signal cannot be detected, at least one of the plurality of self-positioning transceivers positioning itself an incremental distance away from a reference position to search for the homing signal; (v) repeating steps (ii.) through (iv) until the homing signal is detected; and retrieving the self-positioning transceiver system to the home location

Claim 56 is allowed as being dependent on claim 55.

Regarding claim 57, the present invention is of a method of establishing a wireless communication path between a first device and a second device, the method comprising the steps of automatically positioning a self-positioning wireless transceiver system within communication range of a first device and a second device, the self-positioning wireless transceiver system comprising a plurality of communicatively coupled self-positioning transceivers; establishing communicative coupling between the self-positioning wireless transceiver system and the first device; and establishing communicative coupling between the self-positioning wireless transceiver system and the second device while maintaining communicative coupling with the first device; detecting a termination of communication coupling between the first device and tile second device and responsive thereto: (i) issuing a retrieve command to the plurality of self-positioning transceivers; (ii) each of the plurality of self-positioning transceivers positioning itself closer to a neighboring self-positioning transceiver in the approximate direction of the first device; (iii) identifying a self-positioning transceiver of the plurality that is directly

communicatively coupled to the first device; (iv) communicatively decoupling the identified self-positioning transceiver from the other of the plurality of self-positioning transceivers and from the first device; (v) repeat steps (ii) through (iv) until the plurality of self-positioning transceivers have been communicatively decoupled from the first device; and retrieving the plurality of self-positioning transceivers. The closest prior art Pelech et al (Pelech, US Patent No. 6,243,585) in view of Campbell (Campbell, US Patent No. 6,167,263), teach of a method of establishing a wireless communication path between a first device and a second device, the method comprising the steps of automatically positioning a self-positioning wireless transceiver system within communication range of a first device and a second device, the self-positioning wireless transceiver system comprising a plurality of communicatively coupled self-positioning transceivers; establishing communicative coupling between the self-positioning wireless transceiver system and the first device; and establishing communicative coupling between the self-positioning wireless transceiver system and the second device while maintaining communicative coupling with the first device; but alone or in combination with other prior art, not of detecting a termination of communication coupling between the first device and tile second device and responsive thereto: (i) issuing a retrieve command to the plurality of self-positioning transceivers; (ii) each of the plurality of self-positioning transceivers positioning itself closer to a neighboring self-positioning transceiver in the approximate direction of the first device; (iii) identifying a self-positioning transceiver of the plurality that is directly communicatively coupled to the first device; (iv) communicatively decoupling the identified self-positioning transceiver from the other of the plurality of self-positioning transceivers and from the first device; (v) repeat steps (ii) through (iv) until the plurality of self-positioning

transceivers have been communicatively decoupled from the first device; and retrieving the plurality of self-positioning transceivers.

Response to Arguments

5. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Specification

6. The disclosure is objected to because of the following informalities: "wireless transceiver system 10" (assumed to be 100 as no 10 is in the drawings). Appropriate correction is required.

Claim Objections

7. Claim 37 is objected to because of the following informalities: depends on claim 37. Appropriate correction is required.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claims 9, 24, 28, 29, 37, and 59 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claim 9, 28 and 37, the limitation of a "... swimming mobility mechanism, and a crawling mobility mechanism..." was not specifically described the Applicant's specification. Applicant describes different mobility mechanisms (paragraph 0036), but makes

no specific reference to what constitutes "... swimming mobility mechanism, and a crawling mobility mechanism..." or how such are performed with respect to the claimed invention.

Regarding claims 29 and 59, the limitation of a "... including a mobility mechanism comprising a mirco-mechanical flying insect robot," was not specifically described the Applicant's specification. Applicant describes different mobility mechanisms (paragraph 0036), but makes no specific reference to a "... including a mobility mechanism comprising a mirco-mechanical flying insect robot ..." as claimed.

Regarding claim 24, it was not understood how, "(ii) each of the plurality of self-positioning transceivers positioning itself closer to a neighboring self-positioning transceiver in the approximate direction of the first device; (ii) each of the plurality of self-positioning transceivers positioning itself closer to a neighboring self-positioning transceiver in the approximate direction of the first device; (iii) identifying a self-positioning transceiver of the plurality that is directly communicatively coupled to the first device; (iv) communicatively decoupling the identified self-positioning transceiver from the other of the plurality of self-positioning transceivers and from the first device;" as the specification states that the first device can be a mobile (paragraph 0029) and the mobility mechanism can be hovering or crawling (among other forms, paragraph 0036) and thus it was not understood where the devices would end up (assuming for instance a mobile as the first device). Appropriate clarification is required.

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7 and 40 contain the trademark/trade name "BLUETOOTH." Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or

product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe a local area wireless connection standard and accordingly, the identification/description is indefinite.

Regarding claims 7 and 40, note that the use of *"protocols"* (for example, Bluetooth and 802.11x), protocols and standards change over time, hence, it is inappropriate to have the scope of a claim change with time. Since organizations implementing standards meet regularly and have the authority to modify standards, any connection a claim may have to these standards may varying scope over time. The other aspect arising from this is enablement. If the standard changes, the disclosure may no longer support the limitation. If the scope of the invention sought to be patented cannot be determined from the language of the claims, a second paragraph rejection is appropriate (In re Wiggins, 179 USPQ 421).

11. Claims 1 – 59 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 – 59, it was not understood what "automatically self-positioning" entailed. The specification describes "radio controlled" (paragraph 0036) but not specifically if these devices are to be incorporated into commonly known commercial air, water, or land craft

(for example, airplanes, automobiles, or ocean liners), as these devices are not commonly known to be as being "radio controlled." Further clarification is required.

Regarding claim 15, it was not understood what the environment was in order to achieve "wherein the self-positioning wireless transceiver system comprises first, second and third self-positioning transceivers, the method further including the step of the second self-positioning transceiver automatically positioning itself with respect to the first and third self-positioning transceivers such that the quality of a first communication signal received from the first self-positioning transceivers and the quality of a second communication signal received from the third self-positioning transceiver are approximately equal" (note that environment plays a large role in signal propagation from multipaths and obstacles and hence equal positions might not correlate to equal communications quality, based on the multipaths and obstacles each signal experiences). For purposes of examination it was assumed that the devices were all similar in transmission and reception characteristics and that the environment all devices were operating in was the same. Appropriate clarification is required.

Regarding claim 18, it was not understood what the environment was in order to achieve, "repositioning each of the subset of self-positioning transceivers communicatively coupling the first self-positioning transceiver to the second device with respect to a neighboring self-positioning transceiver such that the quality of each communication signal received by each of the subset of self-positioning transceivers from a neighboring self-positioning transceiver are approximately equal" (note that environment plays a large role in signal propagation from multipaths and obstacles and hence equal positions might not correlate to equal communications quality, based on the multipaths and obstacles each signal experiences). For purposes of

examination it was assumed that the devices were all similar in transmission and reception characteristics and that the environment all devices were operating in was the same. Appropriate clarification is required.

Regarding claim 27, it was not understood what the environment was in order to achieve, "wherein the step of the first subset of the plurality of self-positioning transceivers automatically positioning itself within communication range of one of the first device further includes the steps of a first self-positioning transceiver receiving a first communication signal directly from a first neighboring self-positioning transceiver; the first self-positioning transceiver receiving a second communication signal directly from a second neighboring self-positioning transceiver; the first self-positioning transceiver automatically positioning itself with respect to the first and second neighboring self-positioning transceivers such that the quality of the communication signals received from the first and second neighboring self-positioning transceivers are approximately equal" (note that environment plays a large role in signal propagation from multipaths and obstacles and hence equal positions might not correlate to equal communications quality, based on the multipaths and obstacles each signal experiences). For purposes of examination it was assumed that the devices were all similar in transmission and reception characteristics and that the environment all devices were operating in was the same. Appropriate clarification is required.

Regarding claim 50, it was not understood what the environment was in order to achieve, "a method of establishing a wireless communication path between a first device and a second device, the method comprising the steps of: automatically positioning a self-positioning wireless transceiver system, the self-positioning wireless transceiver system including first, second and

third self-positioning wireless transceivers, relative to a first device and a second device such that the second self-positioning wireless transceiver is automatically positioned with respect to the first and third self-positioning transceivers such that the quality of a first communication signal received from the first self-positioning transceivers and the quality of a second communication signal received from the third self-positioning transceiver are approximately equal; establishing communicative coupling between the self-positioning wireless transceiver system and the first device; and establishing communicative coupling between the self-positioning wireless transceiver system and the second device while maintaining communicative coupling with the first device" (note that environment plays a large role in signal propagation from multipaths and obstacles and hence equal positions might not correlate to equal communications quality, based on the multipaths and obstacles each signal experiences). For purposes of examination it was assumed that the devices were all similar in transmission and reception characteristics and that the environment all devices were operating in was the same. Appropriate clarification is required.

Regarding claim 53 it was not understood what the environment was in order to achieve, "repositioning each of the subset of self-positioning transceivers communicatively coupling the first self-positioning transceiver to the second device with respect to a neighboring self-positioning transceiver such that the quality of each communication signal received by each of the subset of self-positioning transceivers from a neighboring self-positioning transceiver are approximately equal;"(note that environment plays a large role in signal propagation from multipaths and obstacles and hence equal positions might not correlate to equal communications quality, based on the multipaths and obstacles each signal experiences). For purposes of

examination it was assumed that the devices were all similar in transmission and reception characteristics and that the environment all devices were operating in was the same. Appropriate clarification is required.

Claim 54 is rejected for at least those reasons recited in independent claim 53.

Regarding claim 58 it was not understood what the environment was in order to achieve, "(iii) the first self-positioning transceiver automatically positioning itself with respect to the first and second neighboring self-positioning transceivers such that the duality of the communication signals received from the first and second neighboring self-positioning transceivers are approximately equal;"(note that environment plays a large role in signal propagation from multipaths and obstacles and hence equal positions might not correlate to equal communications quality, based on the multipaths and obstacles each signal experiences). For purposes of examination it was assumed that the devices were all similar in transmission and reception characteristics and that the environment all devices were operating in was the same. Appropriate clarification is required.

12. Regarding claim 20, the phrase "relatively" renders the claim indefinite because it is a broad term (as confusion could be over whether this was a physical path or the number of hops between source and destination). See MPEP § 2173.05(b).

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

14. Claims 1 – 15, 21, 25 – 28, 30 – 39, 41 – 52, and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pelech et al (Pelech, US Patent No. 6,243,585) in view of Campbell (Campbell, US Patent No. 6,167,263).

Regarding claim 1, Pelech teaches of a method of establishing a wireless communication path between a first device and a second device (Figure 3), the method comprising the steps of: positioning wireless transceiver system to one of a static or dynamic position relative to a first device and a second device, wherein the position and the static or dynamic character of the position is determined based upon a stationary or mobile condition of the first and second devices and enhancing communication quality between the first and the second device via the wireless transceiver system (Figures 3 and 4 and column 2, lines 30 – 42 and column 6, lines 26 –36); establishing communicative coupling between the wireless transceiver system and the first device (Figures 3 and 4 and column 2, lines 30 – 42 and column 5, lines 27 –42); and establishing communicative coupling between the wireless transceiver system and the second device while maintaining communicative coupling with the first device (Figures 3 and 4 and column 2, lines 30 – 42 and column 5, lines 27 –42).

Pelech does not specifically teach of automatically positioning a self-positioning [wireless transceiver system] (note that the brackets are provided for clarity in language and that it is believed that these limitations have been addressed in the above cite reference; it should be noted that Pelech does make reference to the potential use of airborne vehicles, column 4, lines 35 –44 and column 6, lines 17 –22).

In a related art dealing with mobile communication networks, Campbell teaches of automatically positioning a self-positioning wireless transceiver system (column 2, lines 25 – 47 and column 7, lines 36 –58).

It would have been obvious to one skilled in the art at the time of invention to have included into Pelech's mobile and dynamic wireless telecommunications topology, Campbell's mobile communication equipment, for the purposes of providing an alternative, robust, and low cost communication stations, as taught by Campbell.

Regarding claim 2, Pelech in view of Campbell teach all the claimed limitations as recited in claim 1. Campbell further teaches of wherein the self-positioning wireless transceiver system comprises a first self-positioning transceiver (column 2, lines 25 – 47 and column 7, lines 36 –58).

Regarding claim 3, Pelech in view of Campbell teach all the claimed limitations as recited in claim 1. Campbell further teaches of wherein the self-positioning wireless transceiver system comprises first and second self-positioning transceivers (column 2, lines 25 – 47 and column 7, lines 36 –58).

Regarding claim 4, Pelech in view of Campbell teach all the claimed limitations as recited in claim 3. Both Pelech and Campbell teach of further including a step of transmitting data from the first self-positioning transceiver to the second self-positioning transceiver via at least one of radio frequency, infrared frequency and ultrasonic frequency communication channels (Pelech: column 2, lines 30 –37 and Campbell: column 2, lines 47 –53).

Regarding claim 5, Pelech in view of Campbell teach all the claimed limitations as recited in claim 4. Pelech and Campbell further teach of wherein the step of transmitting data

further includes transmitting self-positioning transceiver operational data via a control channel and transmitting communication data via a payload channel (Pelech: column 7,lines 24 – 50 and Campbell: column 7, lines 36 –58 and column 7, lines 16 –25).

Regarding claim 6, Pelech in view of Campbell teach all the claimed limitations as recited in claim 4. Both Pelech and Campbell teach of wherein the step of transmitting data further includes transmitting at least one of voice data, text date, image data, video data and audio data (Pelech: column 6, lines 29 –36 and column 7, lines 25 –35 and Campbell: column 1, lines 25 – 30 and column 2, lines 13 –18).

Regarding claims 7 and 40, Pelech in view of Campbell teach all the claimed limitations as recited in claims 1 and 35. Pelech and Campbell teach of the self-positioning transceiver system (Pelech: column 7,lines 24 – 50 and Campbell: column 7, lines 36 –58 and column 7, lines 16 –25). However, Pelech in view of Campbell do not explicitly show that the self-positioning transceiver system operates in accordance with one of Bluetooth, IEEE 802.11, IEEE 802.11 a, IEEE 802.11 b and IEEE 802.11 g industry specifications. Bluetooth, IEEE 802.11, IEEE 802.11 a, IEEE 802.11 b and IEEE 802.11 g industry specifications in a wireless system is a matter of system preference and is very well known in the art, thus the Examiner takes "Official Notice" as such. Therefore it would have been obvious to one skilled in the art, at the time of invention, to combine Pelech and Campbell with either the Bluetooth, IEEE 802.11, IEEE 802.11 a, IEEE 802.11 b and IEEE 802.11 g industry specifications, in order for the mobile communications between units.

Regarding claim 8, Pelech in view of Campbell teach all the claimed limitations as recited in claim 1. Both Pelech and Campbell teach of wherein the first self-positioning

transceiver further comprises a mobility mechanism (Pelech: column 4, lines 35 –44 and column 6, lines 14 –22 and Campbell: starting column 5, line 64 and ending column 6, line 27).

Regarding claim 9, Pelech in view of Campbell teach all the claimed limitations as recited in claim 8. Both Pelech and Campbell teach of wherein the mobility mechanism comprises one of a flying mobility mechanism, a hovering mobility mechanism, a swimming mobility mechanism, and a crawling mobility mechanism (Pelech: column 4, lines 35 –44 and column 6, lines 14 –22 and Campbell: starting column 5, line 64 and ending column 6, line 27).

Regarding claim 10, Pelech in view of Campbell teach all the claimed limitations as recited in claim 8. Both Pelech and Campbell teach of wherein the mobility mechanism comprises one of a land-craft, aircraft and watercraft that is responsive to a wireless communication signal (Pelech: column 4, lines 35 –44 and column 6, lines 14 –22 and Campbell: starting column 5, line 64 and ending column 6, line 27).

Regarding claim 11, Pelech in view of Campbell teach all the claimed limitations as recited in claim 1. Both Pelech and Campbell teach of wherein the self-positioning wireless transceiver system comprises a plurality of self-positioning transceivers, the method further including a step of deploying the plurality of self-positioning transceivers in a pre-defined configuration (Pelech: column 6,lines 24 –36 and Campbell: starting column 6, line 63 and ending column 7, line 15).

Regarding claim 12, Pelech in view of Campbell teach all the claimed limitations as recited in claim 1. Both Pelech and Campbell teach of wherein the self-positioning wireless transceiver system comprises a plurality of self-positioning transceivers, the method further including a step of deploying the plurality of self-positioning transceivers in a pre-defined swarm

configuration (Pelech: column 6,lines 24 –36 and Campbell: starting column 6, line 63 and ending column 7, line 15).

Regarding 13, Pelech in view of Campbell teach all the claimed limitations as recited in claim 1. Both Pelech in view of Campbell teach of wherein the self-positioning wireless transceiver system comprises a plurality of self-positioning transceivers, the method further including a step of deploying the plurality of self-positioning transceivers to search for a signal transmitted by the second device in pre-defined searching pattern (Pelech: column 6,lines 24 –36 and Campbell: starting column 6, line 63 and ending column 7, line 15 and column 10, lines 46 – 67).

Regarding claim 14, Pelech in view of Campbell teach all the claimed limitations as recited in claim 1. Pelech in view of Campbell further teach of wherein the self-positioning wireless transceiver system comprises first and second pluralities of self-positioning transceivers, the method further including the steps of employing the first plurality of self-positioning transceivers to communicatively couple the first device to the second device and employing the second plurality of self-positioning transceivers to create a second communication path adapted to communicatively couple the first device to the second device (Pelech: column 6, lines 40 – 55 and Campbell: starting column 9, line 64 and ending column 10, line 10).

Regarding claim 15, Pelech in view of Campbell teach all the claimed limitations as recited in claim 1. Campbell further teaches of wherein the self-positioning wireless transceiver system comprises first, second and third self-positioning transceivers, the method further including the step of the second self-positioning transceiver automatically positioning itself with respect to the first and third self-positioning transceivers such that the quality of a first

communication signal received from the first self-positioning transceivers and the quality of a second communication signal received from the third self-positioning transceiver are approximately equal (starting column 8,line 62 and ending column 9, line 12; note that as stated, the EM wave experience free space propagation and hence with each transceiver pair being the same, distances between the paths would have to be the same from free space calculations).

Regarding claim 21, Pelech in view of Campbell, teach all the claimed limitations as recited in claim 1. Pelech further teaches of wherein the self-positioning wireless transceiver system comprises a plurality of communicatively coupled self-positioning transceivers further including the steps of: detecting a termination of communicative coupling between the first device and the second device; and retrieving the plurality of self-positioning transceivers (column 2,lines 30 –36 and column 6, lines 23 –36).

Regarding claim 25, Pelech teaches of a method of increasing the communication range of a first device (Figure 3), the method comprising the steps of providing a plurality of transceivers, each of the plurality of transceivers including a mobility mechanism adapted to enable each of the plurality of transceivers to position itself (Figures 3 and 4 and column 2, lines 30 – 42 and column 6, lines 26 –36); each of the plurality of transceivers positioning itself to a position with respect to the first device, the position having a static or dynamic characteristic based upon a mobile or stationary condition of the first device and enhancing a quality of a communicative coupling with the first device (Figures 3 and 4 and column 2, lines 30 – 42 and column 5, lines 27 –42); and establishing the communicative coupling between each of the plurality of transceivers and the first device (Figures 3 and 4 and column 2, lines 30 – 42 and column 5, lines 27 –42).

Pelech does not specifically teach of automatically positioning a self-positioning [wireless transceiver system] (note that the brackets are provided for clarity in language and that it is believed that these limitations have been addressed in the above cite reference; it should be noted that Pelech does make reference to the potential use of airborne vehicles, column 4, lines 35 –44 and column 6, lines 17 –22).

In a related art dealing with mobile communication networks, Campbell teaches of automatically positioning a self-positioning wireless transceiver system (column 2, lines 25 – 47 and column 7, lines 36 –58).

It would have been obvious to one skilled in the art at the time of invention to have included into Pelech's mobile and dynamic wireless telecommunications topology, Campbell's mobile communication equipment, for the purposes of providing an alternative, robust, and low cost communication stations, as taught by Campbell.

Regarding claim 26, Pelech in view of Campbell teach all the claimed limitations as recited in claim 25. Pelech further teaches of further including the steps of each of a first subset of the plurality of self-positioning transceivers automatically positioning itself within communication range of the first device (Figures 3 and 4 and column 6, lines 41 – 55 and column 7,lines 1 –16); establishing communicative coupling between the first subset of the plurality of self-positioning transceivers and the first device (Figures 3 and 4 and column 6, lines 41 – 55 and column 7,lines 1 –16); each of a second subset of the plurality of self-positioning transceivers automatically positioning itself within communication range of at least one of the first subset of the plurality of self-positioning transceivers (Figures 3 and 4 and column 6, lines 41 – 55 and column 7,lines 1 –16); and establishing communicative coupling between each of

the second subset of the plurality of self-positioning transceivers and the first device via at least one of the first subset of the plurality of self-positioning transceivers (Figures 3 and 4 and column 6, lines 41 – 55 and column 7,lines 1 –16).

Regarding claim 27, Pelech in view of Campbell teach all the claimed limitations as recited in claim 26. Campbell further teaches of wherein the step of the first subset of the plurality of self-positioning transceivers automatically positioning itself within communication range of one of the first device further includes the steps of a first self-positioning transceiver receiving a first communication signal directly from a first neighboring self-positioning transceiver (Figures 1, 2, and 5 and starting column 6, line 63 and ending column 7, line 15); the first self-positioning transceiver receiving a second communication signal directly from a second neighboring self-positioning transceiver (Figures 1, 2, and 5 and starting column 6, line 63 and ending column 7, line 15); the first self-positioning transceiver automatically positioning itself with respect to the first and second neighboring self-positioning transceivers such that the quality of the communication signals received from the first and second neighboring self-positioning transceivers are approximately equal (starting column 8,line 62 and ending column 9, line 12; note that as stated, the EM wave experience free space propagation and hence with each transceiver pair being the same, distances between the paths would have to be the same from free space calculations).

Regarding claim 28, Pelech in view of Campbell teach all the claimed limitations as recited in claim 25. Both Pelech and Campbell teach of wherein the mobility mechanism comprises one of a flying mobility mechanism, a hovering mobility mechanism, a swimming

mobility mechanism, and a crawling mobility mechanism (Pelech: column 4, lines 35 –44 and column 6, lines 14 –22 and Campbell: starting column 5, line 64 and ending column 6, line 27).

Regarding claim 30, Pelech in view of Campbell teach all the claimed limitations as recited in claim 25. Pelech further teaches of wherein the plurality of self-positioning transceivers includes a first subset of self-positioning transceivers and the method further includes the step of communicatively coupling the first device to a second device via the first subset of communicatively coupled self-positioning transceivers (Figures 3 and 4 and column 7, lines 1 –16).

Regarding claim 31, Pelech in view of Campbell teach all the claimed limitations as recited in claim 30. Pelech in view of Campbell further teaches of wherein the plurality of self-positioning transceivers includes a second subset of self-positioning transceivers and the method further includes the step of creating a first alternate communication path between the first device and the second device via the second subset of communicatively coupled self-positioning transceivers (Pelech: column 6, lines 41 –55; Campbell: starting column 9, line 64 and ending column 10, line 10).

Regarding claim 32, Pelech in view of Campbell teach all the claimed limitations as recited in claim 31. Pelech in view of Campbell further teaches of wherein if at least one of the first subset of self-positioning transceivers experiences a malfunction, establishing communicative coupling between the first device and the second device via the first alternate communication path (Pelech: column 6, lines 41 –55; Campbell: starting column 9, line 64 and ending column 10, line 10).

Regarding claim 33, Pelech in view of Campbell teach all the claimed limitations as recited in claim 30. Pelech further teaches of wherein the plurality of self-positioning transceivers includes a second subset of self-positioning transceivers and the method further includes the step of if the strength of a communication signal received by one of the first and second devices falls below a predefined threshold, the second subset of the communicatively coupled self-positioning transceivers automatically positioning themselves to maintain communicative coupling between the first device and the second device (Pelech: column 6, lines 41 –55; as in a handover).

Regarding claim 34, Pelech in view of Campbell teach all the claimed limitations as recited in claim 33. Pelech further teaches of wherein the plurality of self-positioning transceivers includes a third subset of self-positioning transceivers and the method further includes the step of the third subset of the communicatively coupled self-positioning transceivers automatically positioning themselves to create a second alternate communication path between the first device and the second device (Figures 3 and 4 and column 6,lines 7 –14).

Regarding claim 35, Pelech teaches of a transceiver adapted to provide communicatively coupling between a first device and a second device (Figure 3), the transceiver system comprising: a transmitter (Figures 3 and 4 and column 2, lines 30 – 42 and column 6, lines 26 – 36); a receiver (Figures 3 and 4 and column 2, lines 30 – 42 and column 6, lines 26 –36); a mobility mechanism adapted to carry the transmitter and the receiver (Figures 3 and 4 and column 2, lines 30 – 42 and column 6, lines 26 –36 and column 4, lines 35 –44 and column 6,lines 16 –22) and based upon a mobile or stationary condition of one of the first and the second

device (Figures 3 and 4 and column 2, lines 30 – 42 and column 6, lines 26 –36 and column 4, lines 35 –44 and column 6,lines 16 –22).

Pelech does not specifically teach of a processor communicatively coupled to the transmitter, the receiver and the mobility mechanism, the processor being adapted to operate in accordance with a computer program embodied on a computer-readable medium, the computer program comprising: a first routine that directs processing of communication data received from the first device via the receiver; a second routine that directs transmission of the communication data received from the first device to the second device via the transmitter; and a third routine that issues a position command to the mobility mechanism based on the quality of a signal received by the receiver from the first device and based on the quality of a signal received by the receiver from the second device; and based upon a mobile or stationary condition of one of the first and the second device and automatically positioning a self-positioning [wireless transceiver system] (note that the brackets are provided for clarity in language and that it is believed that these limitations have been addressed in the above cite reference; it should be noted that Pelech does make reference to the potential use of airborne vehicles, column 4, lines 35 –44 and column 6, lines 17 –22).

In a related art dealing with mobile communication networks, Campbell teaches of a processor communicatively coupled to the transmitter, the receiver and the mobility mechanism, the processor being adapted to operate in accordance with a computer program embodied on a computer-readable medium (Figure 6), the computer program comprising: a first routine that directs processing of communication data received from the first device via the receiver (Figure 6 and column 7,lines 26 –57); a second routine that directs transmission of the

communication data received from the first device to the second device via the transmitter (Figure 6 and column 7,lines 26 –57); and a third routine that issues a position command to the mobility mechanism based on the quality of a signal received by the receiver from the first device and based on the quality of a signal received by the receiver from the second device (Figure 6 and column 7,lines 26 –57 and column 9, lines 5 –12); and automatically positioning a self-positioning wireless transceiver system (column 2, lines 25 – 47 and column 7, lines 36 – 58).

It would have been obvious to one skilled in the art at the time of invention to have included into Pelech's mobile and dynamic wireless telecommunications topology, Campbell's mobile communication equipment, for the purposes of providing an alternative, robust, and low cost communication stations, as taught by Campbell.

Regarding claim 36, Pelech in view of Campbell teach all the claimed limitations as recited in claim 35. Campbell teach (and Pelech) teach of a transmitter and receiver (Campbell: Figure 6). However, Pelech in view of Campbell do not explicitly show the combination of the transmitter and the receiver comprise a transceiver. Combining a transmitter and receiver into one discrete element or chip is a matter of system preference and is very well known in the art, thus the Examiner takes "Official Notice" as such. Therefore it would have been obvious to one skilled in the art, at the time of invention, to combine Pelech and Campbell's transmitter and receiver to create a transceiver, in order for the mobile communications between units to be performed (in order to save space and share common elements, like the antenna or local oscillators, for example).

Regarding claim 37, Pelech in view of Campbell teach all the claimed limitations as recited in claim 37. Both Pelech and Campbell teach of wherein the mobility mechanism comprises one of a flying mechanism, a hovering mechanism, a swimming mechanism and a crawling mechanism. (Pelech: column 4, lines 35 –44 and column 6, lines 14 –22 and Campbell: starting column 5, line 64 and ending column 6, line 27).

Regarding claim 38, Pelech in view of Campbell teach all the claimed limitations as recited in claim 35. Campbell further teaches of wherein the mobility mechanism comprises one of a land-craft, aircraft and watercraft that is responsive to a wireless communication signal (starting column 5, line 64 and ending column 6, line 27 and column 7, lines 36 –55).

Regarding claim 39, Pelech in view of Campbell teach all the claimed limitations as recited in claim 35. Both Pelech and Campbell teach of wherein the transmitter is adapted to transmit communication data to one of a source device, a destination device and a neighboring self-positioning transceiver (Pelech: Figures 3 and 4 and column 2, lines 30 – 37 and Campbell: Figures 1, 2, and 5 and starting column 6, line 63 and ending column 7, line 15).

Regarding claim 41, Pelech in view of Campbell teach all the claimed limitations as recited in claim 35. Both Pelech and Campbell teach of wherein the receiver is adapted to receive communication data from one of a source device, a destination device and a neighboring self-positioning transceiver (Pelech: Figures 3 and 4 and column 2, lines 30 – 37 and Campbell: Figures 1, 2, and 5 and starting column 6, line 63 and ending column 7, line 15).

Regarding claim 42, Pelech in view of Campbell teach all the claimed limitations as recited in claim 35. Campbell further teaches of further including a random access memory for maintaining self-positioning transceiver operational data (column 9, lines 39 –59).

Regarding claim 43, Pelech in view of Campbell teach all the claimed limitations as recited in claim 35. Pelech in view of Campbell further teach of further comprising a fourth routine that issues the position command to the mobility mechanism in accordance with a pre-defined search pattern (Pelech: column 6,lines 24 –36 and Campbell: starting column 6, line 63 and ending column 7, line 15 and column 10, lines 46 –67).

Regarding claim 44, Pelech in view of Campbell teach all the claimed limitations as recited in claim 35. Pelech and Campbell further teach of wherein the transmitter transmits self-positioning transceiver operational data to a neighboring self-positioning transceiver via a control channel and communication packet data via a payload channel to one of a source device, a destination device and a neighboring self-positioning transceiver (Pelech: column 7,lines 24 – 50 and Campbell: column 7, lines 36 –58 and column 7, lines 16 –25).

Regarding claim 45, Pelech in view of Campbell teach all the claimed limitations as recited in claim 35. Pelech and Campbell further teach of wherein the transmitter is adapted to transmit communication data via at least one of radio frequency, infrared frequency and ultrasonic frequency communication channels (Pelech: column 2, lines 30 – 42 and Campbell: column 1, lines 20 –30 and column 2, lines 12 –19).

Regarding claim 46, Pelech in view of Campbell teach all the claimed limitations as recited in claim 35. Campbell further teaches of further including a fourth routine that directs a periodic monitoring of the communication link quality between the self-positioning transceiver and a neighboring self-positioning transceiver (column 9, lines 7 –12).

Regarding claim 47, Pelech in view of Campbell teach all the claimed limitations as recited in claim 46. Campbell further teaches of further including a fifth routine that maintains

an aggregate communication link quality based on communication link quality data received from a plurality of self-positioning transceivers, the plurality of self-positioning transceivers being communicatively coupled to the self-positioning transceiver (column 9,lines 6 – 12).

Regarding claim 48, Pelech in view of Campbell teach all the claimed limitations as recited in claim 47. Campbell further teaches of further including a sixth routine that issues a command to the mobility mechanism to reposition the self positioning transceiver closer to the neighboring self-positioning transceiver if the communication link quality between the self-positioning transceiver and the neighboring self-positioning transceiver falls below the aggregate communication link quality by a pre-defined threshold (column 9,lines 6 – 12 and starting column 10, line 60 and ending column 11, line 4).

Regarding claim 49, Pelech in view of Campbell teach all the claimed limitations as recited in claim 47. Campbell teaches of further including a sixth routine that issues a command to the mobility mechanism to reposition the self-positioning transceiver further away from the neighboring self-positioning transceiver if the communication link quality between the self-positioning transceiver and the neighboring self-positioning transceiver exceeds the aggregate communication link quality by a pre-defined threshold (column 9,lines 6 – 12 and starting column 10, line 60 and ending column 11, line 4).

Regarding claim 50, Pelech teaches of a method of establishing a wireless communication path between a first device and a second device (Figure 3), the method comprising the steps of: establishing communicative coupling between the wireless transceiver system and the first device (Figures 3 and 4 and column 2, lines 30 – 42 and column 5, lines 27 – 42); and establishing communicative coupling between the wireless transceiver system and the

second device while maintaining communicative coupling with the first device (Figures 3 and 4 and column 2, lines 30 – 42 and column 5, lines 27 –42).

Pelech does not specifically teach of automatically positioning a self-positioning [wireless transceiver system] (note that the brackets are provided for clarity in language and that it is believed that these limitations have been addressed in the above cite reference; it should be noted that Pelech does make reference to the potential use of airborne vehicles, column 4, lines 35 –44 and column 6, lines 17 –22) and automatically positioning a self-positioning wireless transceiver system, the self-positioning wireless transceiver system including first, second and third self-positioning wireless transceivers, relative to a first device and a second device such that the second self-positioning wireless transceiver is automatically positioned with respect to the first and third self-positioning transceivers such that the quality of a first communication signal received from the first self-positioning transceivers and the quality of a second communication signal received from the third self-positioning transceiver are approximately equal.

In a related art dealing with mobile communication networks, Campbell teaches of automatically positioning a self-positioning wireless transceiver system (column 2, lines 25 – 47 and column 7, lines 36 –58) and automatically positioning a self-positioning wireless transceiver system, the self-positioning wireless transceiver system including first, second and third self-positioning wireless transceivers, relative to a first device and a second device such that the second self-positioning wireless transceiver is automatically positioned with respect to the first and third self-positioning transceivers such that the quality of a first communication signal received from the first self-positioning transceivers and the quality of a second communication

signal received from the third self-positioning transceiver are approximately equal (starting column 8,line 62 and ending column 9, line 12; note that as stated, the EM wave experience free space propagation and hence with each transceiver pair being the same, distances between the paths would have to be the same from free space calculations).

It would have been obvious to one skilled in the art at the time of invention to have included into Pelech's mobile and dynamic wireless telecommunications topology, Campbell's mobile communication equipment, for the purposes of providing an alternative, robust, and low cost communication stations, as taught by Campbell.

Regarding claim 51, Pelech teaches of a method of establishing a wireless communication path between a first device and a second device (Figures 3 and 4), the method comprising the steps of: the wireless transceiver system having first and second transceivers, within communication range of a first device and a second device, such that the first transceiver is within communication range of the first device (Figures 3 and 4 and column 2, lines 30 – 42 and column 5, lines 27 –42); establishing communicative coupling between the first wireless transceiver and the first device (Figures 3 and 4 and column 2, lines 30 – 42 and column 5, lines 27 –42); and establishing communicative coupling between the wireless transceiver system and the second device while maintaining communicative coupling with the first device (Figures 3 and 4 and column 2, lines 30 – 42 and column 5, lines 27 –42).

Pelech does not specifically teach of automatically positioning a self-positioning [wireless transceiver system] (note that the brackets are provided for clarity in language and that it is believed that these limitations have been addressed in the above cite reference; it should be noted that Pelech does make reference to the potential use of airborne vehicles, column 4, lines

35 –44 and column 6, lines 17 –22) and the signal received from the second device is less than a first threshold, issuing a request to the second self-positioning transceiver for support and positioning the second self-positioning transceiver within communication range of the first self-positioning transceiver and the first device.

In a related art dealing with mobile communication networks, Campbell teaches of automatically positioning a self-positioning wireless transceiver system (column 2, lines 25 – 47 and column 7, lines 36 –58) and the signal received from the second device is less than a first threshold, issuing a request to the second self-positioning transceiver for support and positioning the second self-positioning transceiver within communication range of the first self-positioning transceiver and the first device (Figure 5 and starting column 8, line 62 and ending column 9, line 12 and starting column 10, line 60 and ending column 11, line 4).

It would have been obvious to one skilled in the art at the time of invention to have included into Pelech's mobile and dynamic wireless telecommunications topology, Campbell's mobile communication equipment, for the purposes of providing an alternative, robust, and low cost communication stations, as taught by Campbell.

Regarding claim 52, Pelech in view of Campbell teach all the claimed limitations as recited claim 51. Campbell further teaches of wherein the first threshold is one of a primary predefined threshold, a pre-defined backup threshold and a dynamically determined threshold (Figure 5 and starting column 8, line 62 and ending column 9, line 12 and starting column 10, line 60 and ending column 11, line 4).

Regarding claim 58, Pelech teaches of a method of increasing the communication range of a first device (Figures 3 and 4), the method comprising the steps of providing a plurality of

transceivers (Figures 3 and 4), each of the plurality of transceivers including a mobility mechanism (column 4, lines 35 –44 and column 6,lines 14 –22); each of a first subset of the plurality of transceivers positioning itself within communication range of the first device by (column 2,lines 30 –43 and column 6,lubes 24 –36): (i) a first transceiver of the first subset of the plurality of transceivers receiving a first communication signal directly from first neighboring self-positioning transceiver (Figures 3 and 4 and column 7, lines 1 –17 and Table 1 and starting column 5, line 51 and ending column 6,line 14); (ii) the first transceiver receiving a second communication signal directly from a second neighboring transceiver of the first subset of the plurality of transceivers (Figures 3 and 4 and column 7, lines 1 –17 and Table 1 and starting column 5, line 51 and ending column 6,line 14); establishing communicative coupling between each of the second subset of the plurality transceivers and the first device via at least one of the first subset of the transceivers (Figures 3 and 4 and column 7, lines 1 –17 and Table 1 and starting column 5, line 51 and ending column 6,line 14 and column 2, lines 30 – 43).

Pelech does not specifically teach of each of the plurality of self-positioning transceivers including a mobility mechanism adapted to enable each of the plurality of self-positioning transceivers to automatically position itself; (iii) the first self-positioning transceiver automatically positioning itself with respect to the first and second neighboring self-positioning transceivers such that the quality of the communication signals received from the first and second neighboring self-positioning transceivers are approximately equal; and each of a second subset of the plurality of self-positioning transceivers automatically positioning itself within communication range of at least one of the first subset of the plurality of self-positioning transceivers; and establishing communicative coupling between each of the second subset of the

plurality of self-positioning transceivers and the first device via at least one of the first subset of the plurality of self-positioning transceivers.

In a related art dealing with mobile communication networks, Campbell teaches of each of the plurality of self-positioning transceivers including a mobility mechanism adapted to enable each of the plurality of self-positioning transceivers to automatically position itself (column 2, lines 25 – 47 and column 7, lines 36 –58); (iii) the first self-positioning transceiver automatically positioning itself with respect to the first and second neighboring self-positioning transceivers such that the quality of the communication signals received from the first and second neighboring self-positioning transceivers are approximately equal (starting column 8,line 62 and ending column 9, line 12; note that as stated, the EM wave experience free space propagation and hence with each transceiver pair being the same, distances between the paths would have to be the same from free space calculations); and each of a second subset of the plurality of self-positioning transceivers automatically positioning itself within communication range of at least one of the first subset of the plurality of self-positioning transceivers (Figure 5 and starting column 6, line 63 and ending column 7, line 15 and starting column 8,line 62 and ending column 9, line 12 and starting column 10, line 60 and ending column 1, line 5); and establishing communicative coupling between each of the second subset of the plurality of self-positioning transceivers and the first device via at least one of the first subset of the plurality of self-positioning transceivers (Figures 1, 2, 5 and starting column 6, line 63 and ending column 7, line 15 and starting column 8,line 62 and ending column 9, line 12 and starting column 10, line 60 and ending column 1, line 5).

It would have been obvious to one skilled in the art at the time of invention to have included into Pelech's mobile and dynamic wireless telecommunications topology, Campbell's mobile communication equipment, for the purposes of providing an alternative, robust, and low cost communication stations, as taught by Campbell.

15. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pelech et al (Pelech, US Patent No. 6,243,585) in view of Campbell (Campbell, US Patent No. 6,167,263) as applied to claim 1 above, and further in view of Richetta et al. (Richetta, US Patent No. 5,499,237).

Regarding claim 20, Pelech in view of Campbell teach all the claimed limitations as recited in claim 1. Pelech in view of Campbell does not specifically teach of wherein the self-positioning wireless transceiver system comprises a plurality of self-positioning transceivers wherein the plurality of self-positioning transceivers are communicatively coupled to create a communication path between the first device and the second device, the method further including the steps of: detecting that the configuration of the plurality of communicatively coupled self-positioning transceivers is in a crossover configuration; identifying a relatively shorter communication path defined by a subset of the plurality of self-positioning transceivers; and issuing a command to the plurality of self-positioning transceivers that are not a member of the subset to communicatively decouple themselves from the first device, the second device and the subset of the plurality of self-positioning transceivers.

In a related art dealing with satellite repeaters, Richetta teaches of wherein the self-positioning wireless transceiver system comprises a plurality of self-positioning transceivers wherein the plurality of self-positioning transceivers are communicatively coupled to create a

communication path between the first device and the second device, the method further including the steps of: detecting that the configuration of the plurality of communicatively coupled self-positioning transceivers is in a crossover configuration (column 4, lines 7 –34 and column 5, lines 15 – 30); identifying a relatively shorter communication path defined by a subset of the plurality of self-positioning transceivers (column 9, lines 4 – 30); and issuing a command to the plurality of self-positioning transceivers that are not a member of the subset to communicatively decouple themselves from the first device, the second device and the subset of the plurality of self-positioning transceivers (column 6, lines 1 – 2 and starting column 6 line 58 and ending column 7 line 7; note that a gateway and base station can perform the same functions, as is known in the art).

It would have been obvious to one skilled in the art at the time of invention to have included into Pelech and Campbell's mobile and dynamic wireless telecommunications topology mobile, Richetta's hopping table, for the purposes of reducing transit time of the data packet through the system, as taught by Richetta.

Citation of Pertinent Prior Art

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Inventor	Publication	Number	Disclosure
Simon et al.	US Patent	5,530,909	Method for Radio Transmitting Information Using Aircrafts as Open Transmission Relays
Seligsohn et al.	European Patent Application	EP 711,476	Sub-Orbital, High Altitude Communications System
Priest et al.	US Patent	6,047,160	Transportable Bases Station for a Trunked Radio Communication System

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tanmay S Lele whose telephone number is (703) 305-3462. The examiner can normally be reached on 9 - 6:30 PM Monday – Thursdays and on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay A. Maung can be reached on (703) 308-7745. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

Tanmay S Lele
Examiner
Art Unit 2684

tsl
March 20, 2004

NAY MAUNG
SUPERVISORY PATENT EXAMINER